STATUS OF THE CLAIMS

The status of the claims of the current application stands as follows:

1. **(Currently Amended)** A method of estimating a process efficiency of a dialysis system comprising a dialyzer, wherein said dialyzer is connected to a patient's blood system for performing a dialysis treatment of the patient, said dialyzer having a potential ~~cleaning~~ clearance capacity (K_{eff}, K), wherein said method comprises:

   determining a whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) ~~defining the patient's response to~~ value representing a whole body clearance of the patient divided by the potential ~~cleaning~~ clearance capacity (K_{eff}, K)~~, the whole body clearance ratio being a dimensionless positive numeral smaller than one~~ of the dialyzer.

2. **(Currently Amended)** A method according to claim 1, wherein the step of determining the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) value comprises:

   measuring a final blood urea concentration no later than approximately one minute after the end of a dialysis treatment;

   measuring an equilibrated blood urea concentration no earlier than approximately one half hour after the end of the dialysis treatment; and

   dividing said final blood urea concentration by said equilibrated blood urea concentration so as to obtain the whole body clearance ratio value.

3. **(Currently Amended)** A method according to claim 2, wherein said measuring of said final blood urea concentration ~~is measured~~ includes measuring said final blood urea concentration immediately after the end of the dialysis treatment ~~to obtain the whole body clearance ratio (K_{wb}/K) with respect to a dialyzer clearance (K)~~.

4. **(Currently Amended)** A method according to claim 2, wherein said measuring of said final blood urea concentration ~~is measured~~ includes measuring said final blood urea concentration

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approximately one minute after the end of the dialysis treatment ~~to obtain the whole body clearance ratio (K_{wb}/K_{eff}) with respect to an effective clearance (K_{eff})~~.

5. **(Currently Amended)** A method according to claim 1, wherein the step of determining the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) value comprises ~~of~~:

measuring an initial urea concentration (C_{d0}, C_{b0});

measuring at least two subsequent urea concentration values at spaced time intervals after the dialysis treatment has started, a first value of said at least two values being measured no earlier than approximately one-half hour after the dialysis treatment has started;

deriving a starting urea concentration based on an extrapolation in time of said at least two values back to the start of the dialysis treatment; and

dividing said starting urea concentration by said initial urea concentration (C_{d0}, C_{b0}).

6. **(Currently Amended)** A method of estimating a whole body clearance ratio (K_{wb}/K_{eff}) value, with respect to an effective clearance (K_{eff}), of a dialysis treatment of a patient, said whole body clearance ratio (K_{wb}/K_{eff}) value defining a response by the patient to a potential ~~cleaning~~ clearance capacity (K_{eff}) of a dialyzer performing the dialysis treatment, comprising:

determining the whole body clearance ratio (K_{wb}/K_{eff})~~, with respect to the effective clearance (K_{eff})~~ value so as to represent a whole body clearance divided by an effective clearance of the dialysis treatment, the whole body clearance ratio value being based on a measurement of a slope (K_{wb}/V) of a logarithmic removal rate function (C_d, C_b), said function corresponding to a lowering of a urea concentration during the dialysis treatment~~, the whole body clearance ratio being a dimensionless positive numeral smaller than one~~.

7. **(Currently Amended)** A method according to claim 6, further comprising:

determining an initial dialysate urea concentration (C_{d0});

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determining a total flow rate (Q_d) of spent dialysate during the dialysis treatment, said dialysis treatment including any ultrafiltration;

calculating, based on measurements performed during a steady state phase (t_3-t_4) of the treatment, the slope (K_{wb}/V) of said logarithmic removal rate function (C_d);

measuring a predialysis urea mass (m_0); and

determining the whole body clearance ratio (K_{wb}/K_{eff})~~, with respect to the effective clearance (K_{eff}),~~ value as a product of said slope (K_{wb}/V) and said predialysis urea mass (m_0), divided by said total flow rate (Q_d) and divided by said initial dialysate urea concentration (C_{d0}).

8. **(Currently Amended)** A method according to claim 6, further comprising:

calculating, based on measurements performed during a steady state phase (t_3-t_4) of the dialysis treatment, the slope (K_{wb}/V) of said logarithmic removal rate function (C_d, C_b);

determining an entire distribution volume (V); and

determining the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) value as the product of said slope (K_{wb}/V) and said entire distribution volume (V) divided by the potential cleaning capacity (K_{eff}, K).

9. **(Previously Presented)** A method according to one of claims 7 or 8, wherein the slope (K_{wb}/V) of said logarithmic removal rate function (C_d) is measured on a dialysate side of a dialysis system comprising the dialyzer.

10. **(Previously Presented)** A method according to claim 8, wherein the slope (K_{wb}/V) of said logarithmic removal rate function (C_b) is measured on a blood side of a dialysis system comprising the dialyzer.

Claims 11-14: **(Canceled)**.

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15. **(Currently Amended)** A method of performing a dialysis treatment program by a dialyzer, said method comprising the steps of:

performing a first dialysis treatment of the patient under a first set of conditions which include at least one of a treatment time and a composition of dialysate in the dialyzer;

estimating, during the first dialysis treatment, a whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) value according to one of claims 2 to 6;

comparing the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) value to a threshold ratio value; and

performing a dialysis treatment of the patient after said first dialysis treatment under a second set of conditions which are different from the first set of conditions, if the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) value is less than the threshold ratio value.

16. **(Currently Amended)** An apparatus ~~configured to estimate a whole body clearance ratio of a dialysis treatment of a patient, the whole body clearance ratio (K_{wb}/K_{eff}), with respect to an effective clearance (K_{eff}), defining a response to a potential cleaning capacity of a dialyzer performing the dialysis treatment~~, ~~said apparatus~~ comprising:

a urea monitor circuit configured to determine an initial dialysate urea concentration (C_{d0}), determine a total flow rate (Q_d) of spent diaslysate during the dialysis treatment including any ultra filtration, measure, during a steady state phase (t_3-t_4) of the dialysis treatment, a slope (K_{wb}/V) of a removal rate function corresponding to a lowering of a dialysate urea concentration during the dialysis treatment, and measure a predialysis urea mass (m_0); and

a processor configured to determine ~~the~~ a whole body clearance ratio (K_{wb}/K_{eff}) value for the patient, ~~the~~ said whole body clearance ratio (K_{wb}/K_{eff}) ~~with respect to the~~ representing a whole body clearance of the patient divided by an effective clearance (K_{eff}), being determined as the product of said slope (K_{wb}/V) and said predialysis urea mass (m_0),

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divided by said flow rate (Q_d) and divided by said initial dialysate urea concentration (C_{d0})~~, the whole body clearance ratio being a dimensionless positive numeral smaller than one~~.

17. **(Canceled).**

18. **(New)** A computer-readable medium containing computer-executable instructions for performing a method of estimating a process efficiency of a dialysis system comprising a dialyzer, wherein the dialyzer is connected to a blood system of a patient for performing a dialysis treatment of the patient and the dialyzer has a potential clearance capacity, the computer-executable instructions comprising:

a set of computer-executable instructions for determining a whole body clearance ratio value representing a whole body clearance of the patient divided by the potential clearance capacity of the dialyzer.

19. **(New)** A computer-readable medium according to claim 18, wherein said set of computer-executable instructions includes:

computer-executable instructions for receiving a final blood urea concentration measured no later than approximately one minute after the end of a dialysis treatment;

computer-executable instructions for receiving an equilibrated blood urea concentration measured no earlier than approximately one half hour after the end of the dialysis treatment;

computer-executable instructions for dividing said final blood urea concentration by said equilibrated blood urea concentration so as to obtain the whole body clearance ratio value; and

computer-executable instructions for displaying the whole body clearance ratio value along with an indication that the whole body clearance ratio value is a whole body clearance ratio.

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20. **(New)** A computer-readable medium according to claim 18, wherein said set of computer-executable instructions includes:

computer-executable instructions for receiving an initial measured urea concentration;

computer-executable instructions for receiving at least two subsequent measured urea concentration values at spaced time intervals after the dialysis treatment has started, a first value of the at least two measured urea concentration values being measured no earlier than approximately one-half hour after the dialysis treatment has started;

computer-executable instructions for deriving a starting urea concentration based on an extrapolation in time of said at least two values back to the start of the dialysis treatment; and

computer-executable instructions for dividing the starting urea concentration by the initial urea concentration.

21. **(New)** A computer-readable medium according to claim 18, wherein said set of computer-executable instructions includes:

computer-executable instructions for measuring a slope of a logarithmic removal rate function corresponding to a lowering of a urea concentration during the dialysis treatment; and

computer-executable instructions for calculating the whole body clearance ratio value based on the slope of the logarithmic removal rate function.

22. **(New)** A computer-readable medium according to claim 21, wherein said set of computer-executable instructions includes:

computer-executable instructions for receiving an initial dialysate urea concentration;

computer-executable instructions for receiving a total flow rate of spent dialysate during the dialysis treatment, the dialysis treatment including any ultrafiltration;

computer-executable instructions for calculating, based on measurements performed during a steady state phase of the treatment, the slope of the logarithmic removal rate function;

computer-executable instructions for receiving a predialysis urea mass; and

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computer-executable instructions for calculating the whole body clearance ratio value as a product of the slope and said predialysis urea mass, divided by the total flow rate and divided by the initial dialysate urea concentration.

23. **(New)** A computer-readable medium according to claim 22, wherein said set of computer-executable instructions further includes computer-executable instructions for displaying the whole body clearance ratio value along with an indication that the whole body clearance ratio value is a whole body clearance ratio.

24. **(New)** A computer-readable medium according to claim 21, wherein said set of computer-executable instructions includes:

computer-executable instructions for calculating, based on measurements performed during a steady state phase of the dialysis treatment, the slope of said logarithmic removal rate function;

computer-executable instructions for determining an entire distribution volume; and

computer-executable instructions for determining the whole body clearance ratio value as the product of the slope and the entire distribution volume divided by the potential cleaning capacity.

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